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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,386	01/18/2002	Anil K. Saksena	IN01159K1	5995

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PATENT DEPARTMENT (K-6-1, 1990)
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EXAMINER	
MONDESI, ROBERT B	
ART UNIT	**PAPER NUMBER**
1653	

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/052,386	SAKSENA ET AL.	
	Examiner	Art Unit	
	Robert B Mondesi	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-94* is/are pending in the application.

4a) Of the above claim(s) *36-39,45-50,67 and 94* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35, 40-44, 51-66 and 58-93* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the amendment filed May 18, 2004. **Claims 68-94** are new. **Claims 1-94** are pending. **Claims 36-39, 45-50, 67 and 94** are withdrawn by the examiner for being drawn no nonelected subject matter. **Claims 1-35, 40-44 and 51-66** and **68-93** as drawn to elected Invention I are currently pending and are under examination.

Withdrawal of Objections and Rejections

The rejection of **claims 30-31, 33, 40-41, 43, 52-60 and 65** under 35 U.S.C § 112, second paragraph is withdrawn.

The rejection of **claim 31** under 35 U.S.C § 101 as being drawn to non-statutory subject matter is withdrawn (use claim).

The rejection of **claims 1-2** under 35 U.S.C § 102(b) as being anticipated by Brunck et al. is withdrawn.

The rejection of **claims 40-44** under statutory double patenting has been removed.

Maintenance of rejections

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to

identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-28, 30-35, 51-66, are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of **claims 1-34, 50-64** of copending Application No. 09/908955. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. **Claims 1-28, 30-35, 51-66** are identical to **claims 1-34, 51-66** in view of scope and subject matter.

New rejection(s)

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-35 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compounds in table 1 (pages 43-51), table 2 (pages 289-340), table 3 (pages 144-182), table 4 (pages 365-429) and table 5 (429-595) does not reasonably provide enablement for all the compounds suggested by the

general structural formula of claim 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to Use or make the invention commensurate in scope with these claims.

The factors to be considered in determining whether undue experimentation is required are summarized In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir.1988). The court in Wands states: "Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' " (Wands, 8 USPQ2d 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." (Wands, 8 USPQ2d 1404). The factors to be considered in determining whether undue experimentation is required include: (1) the breadth of the claims, (2) the nature of the invention, (3) the state of the prior art, (4) the relative skill of those in the art, (5) the predictability or unpredictability of the art, (6) the amount or direction or guidance presented, (7) the presence or absence of working examples, and (8) the quantity of experimentation necessary. Although the quantity of experimentation alone is not dispositive in a determination of whether the required experimentation is undue, this factor does play a central role. For example, a very limited quantity of experimentation may be undue in a fledgling art that is unpredictable where no guidance or working examples are provided in the specification and prior art, whereas

the same amount of experimentation may not be undue when viewed in light of some guidance or a working example or the experimentation required is in a predictable established art. Conversely, a large quantity of experimentation would require a correspondingly greater quantum of guidance, predictability and skill in the art to overcome classification as undue experimentation. In Wands, the determination that undue experimentation was not required to make the claimed invention was based primarily on the nature of the art, and the probability that the required experimentation would result in successfully obtaining the claimed invention. (Wands, 8 USPQ2d 1406). Thus, a combination of factors which, when viewed together, would provide an artisan of ordinary skill in the art with an expectation of successfully obtaining the claimed invention with additional experimentation would preclude the classification of that experimentation as undue. A combination of Wands factors, which provide a very low likelihood of successfully obtaining the claimed invention with additional experimentation, however, would render the additional experimentation undue.

1.Breadth of the claims.

In regards to the method of the invention and the breadth of the claims the broadest interpretation that applies is to compounds presented by the general structure formula (I) of claim 1.

2. The nature of the invention.

The invention is a novel class of pharmaceutical compounds that are inhibitors of Hepatitis C Virus (HCV) protease activity, specifically compounds that inhibit HCV NS3/NS4a serine protease activity.

3. The state of prior art.

In regards to the compounds of the invention presented by the general structural formula (I) of claim 1, the prior art does not provide any evidence of HCV protease inhibitory activity- specifically with regards to HCV NS3/NS4a serine protease inhibitory activity.

4. The relative skill in the art.

The relative skill in the art as it relates to pharmaceutical compounds that inhibit the activity of HCV serine protease is that of a M.D. or Ph. D. level individual.

5. The level of predictability in the art.

Since the prior art does not teach that the compounds presented by general formula (I) of claim 1 formerly existed, the level of predictability is low in regards to the compounds of the invention with respect to HCV serine protease inhibitory activity. Therefore, one of skill in the art would not be able to readily anticipate the inhibitory effects of the compounds of the invention in view of HCV NS3/NS4a serine protease inhibitory activity.

6. The amount of guidance present.

The applicants have not provided guidance for all the compounds presented in the general formula (I) of claim 1 table 1 (pages 43-51), table 2 (pages 289-340), table 3 (pages 144-182), table 4 (pages 365-429) and table 5 (429-595) of the specification of the present application, the applicants have provided results of a HCV protease continuous assay for a group of compounds wherein the applicants have categorized the Ki values associated with each investigated compound as a barometer of HCV

serine protease inhibitory activity. If the Ki of a given compound is between 1-100 nM then the compound is in category A, If the Ki of a given compound is between 101-1000 nM then the compound is in category B, any value for a given compound that is above 1000nM is considered to be in category C. It is obvious to a person skill in the art that there is wide range of Ki values that is associated with these compounds, for example compound 76 has a Ki value that is between 1-100 nM whereas compound 75 has Ki value that is above 1000 nM. With such an apparent wide range of HCV protease activity it is pertinent that the applicants disclose further experimentation to show to a person skill in the art the level of potency for a given compound of the invention. Such information is required by a person skill in the art in order to be able to use the correct amount of the compound of the invention in a process such as an assay or a method of treatment. Furthermore the applicant has only shown how to make a limited number of the peptides of the invention, examples 1-46 (pages, 185-304) since the general structural formula of claim 1 allows for a much larger number of possible peptides than disclosed, a person skill in the art would need more guidance as to how to make all the compounds presented by the general structure formula of claim 1. In view of the compounds of the invention, the applicants have shown some guidance as to how compounds of the invention, compounds in table 1 (pages 43-51), table 2 (pages 289-340), table 3 (pages 144-182), table 4 (pages 365-429) and table 5 (429-595) and in the specification examples 1-46 (Pages 185-304) can be made and perhaps used to inhibit HCV protease activity - but the applicants have not provided guidance, for all the

compounds presented in the general structure formula (I) of claim 1 in, regards to how they can be made and used to inhibit HCV serine protease activity.

7. The existence of working examples.

The specification, examples 1-46 (pages 185-304) provides specific working examples of compounds of table 1 (pages 43-51), table 2 (pages 289-340), table 3 (pages 144-182), table 4 (pages 365-429) and table 5 (429-595) that can be used to inhibit HCV serine protease activity. However, the specification does not provide working examples of all compounds suggested by the general structure formula (I) of claim 1.

8. The quantity of experimentation necessary.

In the case of using all the compounds suggested by the general structure formula (I) of claim 1, a large quantity of experimentation would be required in order for a person of skill in the art to be able to practice the invention, since there are a multitude of possible compounds that are suggested by the general structure formula of claim 1 and each compound needs to be tested for HCV protease inhibitory activity.
Due to the quantity of experimentation still required to be performed by one skill in the art in regards to how to use all the compounds suggested by the general formula (I) of claim 1, the lack of guidance presented in the specification regarding the same, the absence of a working example directed to same, the unpredictable nature of the invention with regards to HCV serine protease inhibitory activity of each compound, the state of the prior art not providing any evidence that all the compounds suggested by general formula (I) of claim 1 will exhibit HCV serine protease inhibitory activity , and the

breath of the claims which fails to provide particular steps for all compounds suggested by the general formula (I) of claim 1 exhibiting HCV serine protease inhibitory activity, the specification fails to teach the skilled artisan in the art how to make and use the invention.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims **40-44** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 39-43 of

copending Application No. 09908955. Compounds in **claim 40**, from page 631 to page 665 of present application, are identical to compounds in **claim 39** of pending application No. 09/908955. Therefore **claim 40** of present application falls within the scope of **claim 39** of copending application No. 09/908955.

This is a provisional obviousness-type double patenting rejection.

Claims 51-66 and 68-93 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claim 1** of copending Application No. 09908955. Compounds in claims 51-66 and 68-93 of the present application fall within the scope of general structure formula (I) of **claim 1** of copending application No. 09/908955.

Conclusion

No claims are allowed

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert B Mondesi whose telephone number is 571-272-0956. The examiner can normally be reached on 9am-5pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RBMon

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07-23-04